

## Cover Page for Kindergarten Math Scope and Sequence

The purpose of this document is to clarify the intentions of this Scope and Sequence (SAS) and to provide a window into the thinking behind the choices made. If you have further questions, concerns, and/or ideas, please reach out to Camsie McAdams, Director of STEM. We are excited to make our math work exemplary throughout the district!

**PLEASE NOTE THAT STANDARDS APPEARING IN BOLD IN THE SAS DOCUMENTS ARE CONSIDERED MAJOR FOCUS STANDARDS (guidance from PARCC).**

### **1. What is our main focus in each unit?**

*Unit 1.1 – Sorting: classifying and building students’ language for a mathematically-rich classroom environment*

*Unit 1.2 – Quantities – How Many: counting to quantify – using numbers in order and recognizing which group has more/less*

*Unit 2.1 – Sorting by Attributes: comparing attributes of objects using numbers and shapes as a context for this – deepening students language around numbers, shapes, and quantities*

*Unit 3.1 – Counting Numbers: counting (rote counting but also from any given number) – although counting should be part of everyday routines, this becomes the focus here*

*Unit 3.2 – Writing Numbers: students will write and compare numerals*

*Unit 4.1 – Putting It Together and Taking It Apart: addition and subtraction; composing and decomposing numbers*

*Unit 5.1 – Shapes: 2 and 3-dimensional shapes – attributes and composition*

*Unit 6.1 – Bridge: addition and subtraction (going beyond 10)*

### **2. Why are we starting with sorting when numbers are so critical at this grade level?**

*The goal is to develop students’ language when they are describing the world around them. Digits and numbers are an abstract representation and will come later in the year. At the onset, we want our very young children getting a broader sense of how to make sense of their world – through sorting, describing, and comparing objects and quantities.*

### **3. Why are we waiting until January to have students write their numbers?**

*Numerals are the abstract symbols that represent the quantity represented. We want to spend the first half of the year strengthening their conceptual understanding of quantities, using the names of those quantities (numbers) before assigning an abstract representation (numeral) to them. Additionally, children’s fine motor skills are further developed at this point in the year and so working on the mechanics of writing aligns with this developmental stage.*

**4. How can I incorporate the routine/ fluency standards since they happen throughout the year?**

*Counting quantities or rote counting, adding numbers up to 5 and using positional vocabulary are skills you can incorporate in daily morning meetings or morning/math messages. For example, when taking attendance, count and compare how many people are here versus how many are not; or how many boys and how many girls are in the class. Consistently modeling and expecting students to use language of numbers, shapes, and position (next to, behind, in front of...) will also build their fluency and understanding of these key concepts.*

**5. How can I incorporate the Standards for Mathematical Practice and why are only 2-3 underlined in each Instructional Unit?**

*While the Standards for Mathematical Practice are not necessarily content-specific, we felt that some were better aligned to each unit. These standards should drive your pedagogical work every day. They are “habits of mind” that permeate the way we think and act on a daily basis. We recommend naming these with your students (although putting them in kid-friendly language may help at this age), so that the standards become part of your classroom’s norms.*

**6. Why does unit 2.1 begin with K.G.4 and K.G.2– a geometry standard – when the geometry unit isn’t until later?**

*K.G.4 and K.G.2 are meant to provide context for this unit. When we think about students comparing quantities, by bringing in shapes, we provide them with something to compare. In this unit, students can begin comparing the number (quantity) of sides different shapes have, for example. The geometry goals for this unit are to provide exposure to shape language and attributes so that when the deeper dive happens in unit 5.1, students will be able to construct and deconstruct more complex shapes with efficiency.*

**7. What am I supposed to teach and do in unit 6.1?**

*The sixth instructional window is meant to be a bridge from one grade level to the next. We have selected some of the priority standards from this grade and linked them to similar standards in the upcoming one so that we are preparing our students for their next steps. Additionally, this is the time to really ensure all students have mastered the fluency standards and the major foci for this grade level.*

**8. What role does assessment play in my math instruction?**

*Formative (on-going) assessments are an important part of instruction at every grade level. We strongly encourage you to take anecdotal notes on what your students are doing, saying, figuring out, and moving towards on a daily basis (at least for a few students per day). Building this type of work into your practice as a routine will make it seem less daunting and will also provide you with valuable information to inform your instruction – whether it be for your class, for a small group, or for individual students.*

**9. What does it really mean to have “real world applications”? Can I just use word problems in my instruction?**

*This is an interesting question! We encourage you to have conversations with colleagues about “school math” versus “real world” applications. Are we writing word problems for word problems’ sake or are we really asking students to apply concepts at a deeper level? For example, giving students the problem, “Jake had 4 candy bars and gave 3 away. How many does he have now?” is more of a “school math” problem. We may not need to figure this out in our “real life”. However, if we are comparing shapes, we may authentically ask, “How many more sides does a square have than a triangle?”*

## SY 2012-2013 Kindergarten CCSSM Math Scope and Sequence

First Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p><b>August 27 – October 11</b></p> <p>Instructional Days: 32</p>	<p><b>1.1 Sorting</b></p> <p>Approximate number of instructional days: 10 days</p>	<p><b>K.MD.3</b> Classify objects into given categories; count the number of objects in each category and sort the categories by count.</p> <p><b>K.G.2</b> Correctly name shapes regardless of their orientations or overall size (<i>Note: this standard will repeat later – the context of sorting into categories is most important now.</i>)</p> <p><b>K.MD.2</b> Directly compare two objects with a measurable attribute to see which object has “more of/less of” the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/shorter. (Note: this standard will repeat later – the context of language to compare quantities is most important now.)</i></p>
	<p><b>1.2 Quantities – How many?</b></p> <p>Approximate number of instructional days: 22 days</p>	<p><b>K.CC.4</b> Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <ul style="list-style-type: none"> <li>a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</li> <li>b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they are counted.</li> <li>c. Understand that each successive number name refers to a quantity that is one larger.</li> </ul> <p><b>K.CC.5</b> Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.</p> <p><b>K.CC.6</b> Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, (e.g. by using matching and counting strategies).</p>

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### **Routine/Fluency Standards:**

**K.CC.1** Count to 100 by ones and by tens. *(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 3.)*

**K.CC.5** Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. *(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in the next unit.)*

**K.G.1** Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to. *(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 5.)*

**Standards for Mathematical Practice:** *Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

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Second Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p>October 12 – December 5</p> <p>Instructional Days: 34</p>	<p><b>2.1 Sorting by Attributes</b></p> <p>Approximate number of instructional days: 34 days</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p><b>K.G.4</b> Analyze and compare two and three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (number of sides and vertices/corners) and other attributes (having sides of equal length).</p> <p><b>K.G.2</b> Correctly name shapes regardless of their orientations or overall size.</p> <p><b>K.MD.2 Directly</b> compare two objects with a measurable attribute to see which object has “more of/less of” the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i></p> <p><b>K.MD.1</b> Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.</p> <p><b>K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, (e.g. by using matching and counting strategies).</b></p> <hr/> <p><b>Routine/Fluency Standards:</b></p> <p><b>K.CC.1</b> Count to 100 by ones and by tens. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 3.)</i></p> <p><b>K.CC.5</b> Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. <i>(Note: this is a routine standard throughout the year.)</i></p> <p><b>K.G.1</b> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 5.)</i></p>



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		<p><b>Standards for Mathematical Practice:</b> <i>Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.</i></p> <ol style="list-style-type: none"><li>1. <u>Make sense of problems and persevere in solving them.</u></li><li>2. Reason abstractly and quantitatively.</li><li>3. Construct viable arguments and critique the reasoning of others.</li><li>4. Model with mathematics.</li><li>5. <u>Use appropriate tools strategically.</u></li><li>6. Attend to precision.</li><li>7. <u>Look for and make use of structure.</u></li><li>8. Look for and express regularity in repeated reasoning.</li></ol>
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## SY 2012-2013 Kindergarten CCSSM Math Scope and Sequence

Third Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
December 6 – February 6  Instructional Days: 33	<b>3.1 Counting Numbers</b>  Approximate number of instructional days: 11 days (before winter break)	<p><b>K.CC.1</b> Count to 100 by tens and ones.</p> <p><b>K.CC.2</b> Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</p>
	<b>3.2 Writing Numbers</b>  Approximate number of instructional days: 22 days (after winter break)	<p><b>K.CC.3</b> Write numbers from 0-20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).</p> <p><b>K.CC.7</b> Compare two numbers between 1 and 10 presented as written numerals.</p> <hr/> <p><b>Routine/Fluency Standards:</b></p> <p><b>K.CC.1</b> Count to 100 by ones and by tens. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 3.)</i></p> <p><b>K.CC.5</b> Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. <i>(Note: this is a routine standard throughout the year.)</i></p> <p><b>K.G.1</b> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 5.)</i></p>

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**Standards for Mathematical Practice:** *Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
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Fourth Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p>February 7 – March 29</p> <p>Instructional Days: 34</p>	<p><b>4.1 Putting It Together and Taking It Apart</b></p> <p>Approximate number of instructional days: 34</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p><b>K.OA.1</b> Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (claps), acting out situations, verbal explanations, expressions or equations.</p> <p><b>K.OA.4</b> For any number from 1-9, find the number that makes 10 when added to the given number, (eg., by using objects or drawings, and record the answer with a drawing or equation).</p> <p><b>K.OA.2</b> Solve addition and subtraction word problems, and add and subtract within 10, (e.g. by using objects or drawings to represent the problem).</p> <p><b>K.OA.3</b> Decompose numbers less than or equal to 10 into pairs in more than one way, (e.g., by using objects or drawings and record each decomposition by a drawing or equation (e.g., <math>5=2+3</math> and <math>5=4+1</math>).</p> <p><b>K.NBT.1</b> Compose and decompose numbers from 11-19 into ten ones and some further ones, (e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g. <math>18 = 10+8</math>); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.</p> <p><b>Routine/Fluency Standards:</b></p> <p><b>K.OA.5</b> Fluently add and subtract within 5.</p> <p><b>K.CC.1</b> Count to 100 by ones and by tens. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 3.)</i></p> <p><b>K.CC.5</b> Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. <i>(Note: this is a routine standard throughout the year.)</i></p> <p><b>K.G.1</b> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 5.)</i></p>

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**Standards for Mathematical Practice:** *Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.*

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Fifth Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p><b>April 8 to May 3</b></p> <p>Instructional Days: 18</p>	<p><b>5.1 Shapes</b></p> <p>Approximate number of Instructional Days: 18</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p><b>K.G.2</b> Correctly name shapes regardless of their orientations or overall size.</p> <p><b>K.G.1</b> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to.</p> <p><b>K.G.5</b> Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.</p> <p><b>K.G.3</b> Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p> <p><b>K.G.6</b> Compose single shapes to form larger shapes. <i>For example, can you join these two triangles with full sides touching to make a rectangle?</i></p> <p><b>K.G.4</b> Analyze and compare two and three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (number of sides and vertices/corners) and other attributes (having sides of equal length).</p> <hr/> <p><b>Routine/Fluency Standards:</b></p> <p><b>K.CC.1</b> Count to 100 by ones and by tens. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 3.)</i></p> <p><b>K.CC.5</b> Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. <i>(Note: this is a routine standard throughout the year.)</i></p> <p><b>K.G.1</b> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to. <i>(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 5.)</i></p>



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		<p><b>Standards for Mathematical Practice:</b> <i>Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.</i></p> <ol style="list-style-type: none"><li>1. Make sense of problems and persevere in solving them.</li><li>2. Reason abstractly and quantitatively.</li><li>3. <u>Construct viable arguments and critique the reasoning of others.</u></li><li>4. <u>Model with mathematics.</u></li><li>5. <u>Use appropriate tools strategically.</u></li><li>6. Attend to precision.</li><li>7. Look for and make use of structure.</li><li>8. Look for and express regularity in repeated reasoning.</li></ol>
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## SY 2012-2013 Kindergarten CCSSM Math Scope and Sequence

Sixth Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p><b>May 6 to June 20</b></p> <p>Instructional Days: 32</p>	<p><b>6.1 Major Focus Standards and Bridge to 1st Grade</b></p> <p>Approximate number of instructional days: 32</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p><b>K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (claps), acting out situations, verbal explanations, expressions or equations.</b></p> <p><b>K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, (e.g., by using objects or drawings and record each decomposition by a drawing or equation (e.g., <math>5=2+3</math> and <math>5=4+1</math>)).</b></p> <p><b>K.CC.5 Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.</b></p> <p><b>1. OA.3 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on, decomposing a number leading to 10, using the relationship between addition and subtraction, and creating equivalent but easier or known sums by creating the known equivalent.</b></p>
		<p><b>Routine/Fluency Standards:</b></p> <p><b>K.OA.5</b> Fluently add and subtract within 5.</p> <p><b>K.CC.1</b> Count to 100 by ones and by tens.</p> <p><b>K.CC.5</b> Count to answer “how many” questions about as many as 20 things arranged in a line, a rectangular array or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.</p>
		<p><b>Standards for Mathematical Practice:</b> <i>Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.</i></p> <ol style="list-style-type: none"> <li><u>1. Make sense of problems and persevere in solving them.</u></li> <li>2. Reason abstractly and quantitatively.</li> <li>3. Construct viable arguments and critique the reasoning of others.</li> <li>4. Model with mathematics.</li> <li>5. Use appropriate tools strategically.</li> </ol>

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